



Pension Plan

Employees' Retirement System
of Milwaukee County
Monthly Update
August 31, 2016

Total Fund Composite

Manager Status

Market Value: \$1,663.9 Million and 100.0% of Fund

Investment Manager	Asset Class	Status	Reason
J.P. Morgan	Core Fixed Income	On Notice	Organizational Issues
Mellon Capital	Core Fixed Income	In Compliance	---
Boston Partners	Large-Cap Value	In Compliance	---
Mellon Capital	Large-Cap Core	In Compliance	---
Artisan Partners	Mid-Cap Growth	Alert	Performance
Geneva Capital	Mid-Cap Growth	Alert	Performance
Silvercrest Asset Management	Small-Cap Value	In Compliance	---
Mesirow	Small-Cap Value	Alert	Organizational Issues
NTGI ACWI Ex-US	Non-U.S. All-Cap Core	In Compliance	---
GMO Small-Cap	Non-U.S. Small-Cap Value	Termination	Performance
OFI Institutional Asset Management	Emerging Markets	In Compliance	---
ABS	Hedged Equity Hedge FoF	Alert	Performance
K2	Hedged Equity Hedge FoF	Termination	Organizational Issues
Parametric Defensive Equity	Long/Short Hedge Fund	In Compliance	---
American Realty Advisors	Core Real Estate	In Compliance	---
Morgan Stanley	Core Real Estate	In Compliance	---
UBS	Core Real Estate	In Compliance	---
IFM	Core Infrastructure	In Compliance	---
J.P. Morgan Infrastructure	Core Infrastructure	In Compliance	---
Adams Street	Private Equity	In Compliance	---
Siguler Guff II	U.S. Private Equity FoF	In Compliance	---
Siguler Guff III	U.S. Private Equity FoF	In Compliance	---
Mesirow VI	U.S. Private Equity FoF	In Compliance	---

Investment Manager Evaluation Terminology

The following terminology has been developed by Marquette Associates to facilitate efficient communication among the Investment Manager, Investment Consultant, and the Plan Sponsor. Each term signifies a particular status with the Fund and any conditions that may require improvement. In each case, communication is made only after consultation with the Trustees and/or the Investment Committee of the Plan.

In Compliance – The investment manager states it is acting in accordance with the Investment Policy Guidelines.

Alert – The investment manager is notified of a problem in performance (usually related to a benchmark or volatility measure), a change in investment characteristics, an alteration in management style or key investment professionals, and/or any other irregularities.

On Notice – The investment manager is notified of continued concern with one or more Alert issues. Failure to improve upon stated issues within a specific time frame justifies termination.

Termination – The Trustees have decided to terminate the investment manager. The investment manager is notified and transition plans are in place.

Total Fund Composite

Market Value: \$1,663.9 Million and 100.0% of Fund

Ending August 31, 2016

	Asset Class	Market Value (\$)	3 Mo Net Cash Flows (\$)	% of Portfolio	Policy %	Policy Difference (\$)
Total Fund Composite		1,663,933,758	-50,646,815	100.0	100.0	0
Fixed Income Composite		277,606,429	-5,320,000	16.7	18.0	-21,901,647
J.P. Morgan	Core Fixed Income	173,760,372	-30,320,000	10.4		
Mellon Capital	Core Fixed Income	103,846,057	25,000,000	6.2		
U.S. Equity Composite		418,648,899	-22,000,000	25.2	25.0	2,665,459
Boston Partners	Large-Cap Value	133,363,249	-5,000,000	8.0	8.0	248,548
Mellon Capital	Large-Cap Core	92,290,050	-12,000,000	5.5	6.0	-7,545,976
Artisan Partners	Mid-Cap Growth	43,856,278	0	2.6	2.5	2,257,934
Geneva Capital	Mid-Cap Growth	42,518,430	-2,000,000	2.6	2.5	920,086
Mesirov	Small-Cap Value	52,097,743	0	3.1	3.0	2,179,731
Silvercrest Asset Management	Small-Cap Value	54,523,149	-3,000,000	3.3	3.0	4,605,136
International Equity Composite		326,348,269	-106,241	19.6	20.0	-6,438,482
NTGI ACWI Ex-US	Non-U.S. All-Cap Core	203,947,005	0	12.3	13.0	-12,364,383
GMO Small-Cap	Non-U.S. Small-Cap Value	68,893,887	0	4.1	4.0	2,336,537
OFI Institutional Asset Management	Emerging Markets	53,507,377	-106,241	3.2	3.0	3,589,364
Hedged Equity Composite		182,070,353	31,704	10.9	10.0	15,676,977
ABS	Hedged Equity Hedge FoF	87,769,117	31,704	5.3	5.0	4,572,429
Parametric Defensive Equity	Long/Short Hedge Fund	89,763,594	0	5.4	5.0	6,566,906
K2	Hedged Equity Hedge FoF	4,537,642	0	0.3	0.0	4,537,642
Real Estate Composite		168,671,800	-20,272,173	10.1	8.5	27,237,430
American Realty Advisors	Core Real Estate	40,342,297	-606,126	2.4		
Morgan Stanley	Core Real Estate	87,957,738	-19,247,885	5.3		
UBS	Core Real Estate	40,366,391	-418,162	2.4		
Infrastructure Composite		152,336,759	-2,272,169	9.2	8.5	10,902,390
IFM	Core Infrastructure	73,600,307	-544,007	4.4		
J.P. Morgan Infrastructure	Core Infrastructure	78,736,453	-1,728,162	4.7		

Total Fund Composite

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Ending August 31, 2016

	Asset Class	Market Value (\$)	3 Mo Net Cash Flows (\$)	% of Portfolio	Policy %	Policy Difference (\$)
Private Equity Composite		113,502,475	11,221,280	6.8	10.0	-52,890,901
Progress	U.S. Private Equity FoF	25,924	0	0.0		
Brinson 1998	U.S. Private Equity FoF	75,797	0	0.0		
Brinson 1999	U.S. Private Equity FoF	102,577	0	0.0		
Brinson 2000	U.S. Private Equity FoF	278,779	-139,914	0.0		
Brinson 2001	U.S. Private Equity FoF	743,577	0	0.0		
Brinson 2002	U.S. Private Equity FoF	444,770	0	0.0		
Brinson 2003	U.S. Private Equity FoF	425,944	-73,250	0.0		
Brinson 2004	U.S. Private Equity FoF	691,065	-107,417	0.0		
Adams Street 2005	U.S. Private Equity FoF	4,274,223	-302,119	0.3		
Adams Street 2009	U.S. Private Equity FoF	22,840,673	-30,896	1.4		
Adams Street 2012	Global Divers. Private Equity FoF	24,689,155	1,520,000	1.5		
Adams Street Co-Investment III	Private Equity Co- Investment	7,933,414	3,120,000	0.5		
Siguler Guff II	U.S. Private Equity FoF	30,219,153	-265,124	1.8		
Siguler Guff III	U.S. Private Equity FoF	12,006,147	6,600,000	0.7		
Mesirov VI	U.S. Private Equity FoF	8,751,277	900,000	0.5		
Total Cash Equivalents		24,748,774	-11,929,216	1.5	0.0	24,748,774

Total Fund Composite

Annualized Performance (Net of Fees)

Market Value: \$1,663.9 Million and 100.0% of Fund

Ending August 31, 2016

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	0.4%	2.4%	4.7%	6.4%	3.6%	7.1%	8.0%	7.6%	8.1%	5.5%
<i>Total Fund Benchmark</i>	0.2%	2.6%	5.0%	5.9%	2.9%	6.4%	7.5%	7.3%	7.9%	5.2%
Fixed Income Composite	-0.2%	2.1%	5.5%	5.5%	3.9%	4.3%	2.8%	3.4%	4.7%	5.2%
<i>Barclays Aggregate</i>	-0.1%	2.3%	5.9%	6.0%	3.7%	4.4%	2.6%	3.2%	4.3%	4.9%
U.S. Equity Composite	0.9%	4.0%	6.9%	7.8%	4.7%	9.8%	12.7%	13.2%	13.0%	7.4%
<i>Wilshire 5000 Total Market</i>	0.3%	4.5%	8.3%	12.1%	6.0%	11.9%	13.8%	14.5%	13.8%	7.7%
International Equity Composite	1.0%	3.7%	5.0%	6.7%	-2.7%	4.2%	6.5%	4.3%	5.0%	0.9%
<i>MSCI ACWI ex USA</i>	0.6%	4.0%	4.5%	2.9%	-5.0%	2.0%	4.7%	3.3%	4.2%	2.0%
Hedged Equity Composite	0.6%	1.7%	-0.1%	-1.7%	2.1%	5.7%	7.1%	6.0%	--	--
<i>HFRX Equity Hedge Index</i>	-0.2%	0.3%	-2.2%	-3.4%	-2.2%	0.8%	2.4%	1.3%	0.5%	-0.8%
<i>Russell 3000</i>	0.3%	4.4%	8.0%	11.4%	5.8%	11.7%	13.8%	14.5%	13.8%	7.6%
<i>MSCI ACWI</i>	0.3%	4.0%	5.9%	7.2%	0.3%	6.7%	8.9%	8.3%	8.4%	4.4%
Real Estate Composite	0.0%	1.9%	3.9%	10.7%	12.8%	12.7%	12.7%	12.5%	13.5%	5.4%
<i>Custom Real Estate Benchmark</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	13.5%	5.0%
<i>NFI</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	10.7%	5.0%
Infrastructure Composite	-0.4%	-1.5%	2.5%	4.1%	1.2%	3.4%	4.8%	4.6%	--	--
<i>CPI +4%</i>	0.3%	1.2%	4.4%	5.0%	4.6%	5.0%	5.1%	5.3%	5.6%	5.7%
Private Equity Composite	0.0%	0.2%	-0.3%	1.6%	4.3%	9.1%	8.8%	7.5%	10.9%	8.4%
<i>Cambridge Associates All PE</i>	0.0%	0.0%	0.0%	1.1%	4.7%	9.3%	10.7%	10.4%	12.4%	9.7%

Investment Manager

Annualized Performance (Net of Fees)

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Ending August 31, 2016

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	0.4%	2.4%	4.7%	6.4%	3.6%	7.1%	8.0%	7.6%	8.1%	5.5%
<i>Total Fund Benchmark</i>	0.2%	2.6%	5.0%	5.9%	2.9%	6.4%	7.5%	7.3%	7.9%	5.2%
Fixed Income Composite	-0.2%	2.1%	5.5%	5.5%	3.9%	4.3%	2.8%	3.4%	4.7%	5.2%
<i>Barclays Aggregate</i>	-0.1%	2.3%	5.9%	6.0%	3.7%	4.4%	2.6%	3.2%	4.3%	4.9%
J.P. Morgan	-0.2%	2.1%	5.4%	5.4%	3.9%	4.3%	2.9%	3.4%	4.4%	5.0%
<i>Barclays Aggregate</i>	-0.1%	2.3%	5.9%	6.0%	3.7%	4.4%	2.6%	3.2%	4.3%	4.9%
Mellon Capital	-0.1%	2.3%	5.8%	5.8%	3.6%	4.3%	2.5%	3.2%	4.2%	4.8%
<i>Barclays Aggregate</i>	-0.1%	2.3%	5.9%	6.0%	3.7%	4.4%	2.6%	3.2%	4.3%	4.9%
U.S. Equity Composite	0.9%	4.0%	6.9%	7.8%	4.7%	9.8%	12.7%	13.2%	13.0%	7.4%
<i>Wilshire 5000 Total Market</i>	0.3%	4.5%	8.3%	12.1%	6.0%	11.9%	13.8%	14.5%	13.8%	7.7%
Boston Partners	1.4%	3.2%	5.9%	6.2%	2.4%	8.8%	12.8%	14.4%	12.8%	7.8%
<i>Russell 1000 Value</i>	0.8%	4.6%	10.2%	12.9%	4.4%	10.7%	13.7%	14.4%	13.0%	6.1%
Mellon Capital	0.1%	4.1%	7.8%	12.5%	6.3%	12.3%	13.8%	14.6%	13.7%	7.5%
<i>S&P 500</i>	0.1%	4.1%	7.8%	12.6%	6.3%	12.3%	13.9%	14.7%	13.8%	7.5%
Artisan Partners	0.4%	4.5%	3.5%	4.6%	3.8%	9.0%	12.5%	12.7%	15.5%	10.6%
<i>Russell MidCap Growth</i>	-0.3%	4.6%	6.9%	7.0%	4.7%	10.7%	13.9%	13.4%	14.8%	8.8%
Geneva Capital	0.0%	1.6%	4.8%	4.3%	6.8%	9.1%	11.1%	--	--	--
<i>Russell MidCap Growth</i>	-0.3%	4.6%	6.9%	7.0%	4.7%	10.7%	13.9%	13.4%	14.8%	8.8%
Mesirow	-0.2%	2.9%	4.5%	2.6%	3.3%	7.7%	11.4%	11.3%	--	--
<i>Russell 2000 Value</i>	2.5%	8.3%	14.6%	13.8%	4.0%	8.5%	12.3%	12.6%	12.3%	5.8%
Silvercrest Asset Management	3.0%	8.8%	14.8%	14.3%	7.6%	--	--	--	--	--
<i>Russell 2000 Value</i>	2.5%	8.3%	14.6%	13.8%	4.0%	8.5%	12.3%	12.6%	12.3%	5.8%
International Equity Composite	1.0%	3.7%	5.0%	6.7%	-2.7%	4.2%	6.5%	4.3%	5.0%	0.9%
<i>MSCI ACWI ex USA</i>	0.6%	4.0%	4.5%	2.9%	-5.0%	2.0%	4.7%	3.3%	4.2%	2.0%
NTGI ACWI Ex-US	0.5%	3.8%	4.8%	3.8%	-4.3%	2.7%	--	--	--	--
<i>MSCI ACWI ex USA</i>	0.6%	4.0%	4.5%	2.9%	-5.0%	2.0%	4.7%	3.3%	4.2%	2.0%
GMO Small-Cap	0.9%	0.5%	2.5%	2.3%	-2.4%	4.5%	10.1%	7.0%	7.6%	--
<i>MSCI EAFE Small Cap</i>	-0.6%	-0.1%	2.1%	5.4%	1.7%	7.1%	11.2%	8.0%	8.4%	4.1%
OFI Institutional Asset Management	3.1%	7.9%	10.1%	12.1%	-8.6%	--	--	--	--	--
<i>MSCI Emerging Markets</i>	2.5%	11.9%	14.5%	11.8%	-7.2%	1.1%	1.0%	-0.4%	3.4%	3.9%

Investment Manager

Annualized Performance (Net of Fees)

Market Value: \$1,663.9 Million and 100.0% of Fund

Ending August 31, 2016

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Hedged Equity Composite	0.6%	1.7%	-0.1%	-1.7%	2.1%	5.7%	7.1%	6.0%	--	--
<i>HFRX Equity Hedge Index</i>	-0.2%	0.3%	-2.2%	-3.4%	-2.2%	0.8%	2.4%	1.3%	0.5%	-0.8%
<i>Russell 3000</i>	0.3%	4.4%	8.0%	11.4%	5.8%	11.7%	13.8%	14.5%	13.8%	7.6%
<i>MSCI ACWI</i>	0.3%	4.0%	5.9%	7.2%	0.3%	6.7%	8.9%	8.3%	8.4%	4.4%
ABS	0.8%	0.9%	-4.9%	-4.9%	0.8%	4.8%	6.6%	5.1%	--	--
<i>HFRX Equity Hedge Index</i>	-0.2%	0.3%	-2.2%	-3.4%	-2.2%	0.8%	2.4%	1.3%	0.5%	-0.8%
<i>Russell 3000</i>	0.3%	4.4%	8.0%	11.4%	5.8%	11.7%	13.8%	14.5%	13.8%	7.6%
<i>MSCI ACWI</i>	0.3%	4.0%	5.9%	7.2%	0.3%	6.7%	8.9%	8.3%	8.4%	4.4%
Parametric Defensive Equity	0.4%	2.7%	5.3%	--	--	--	--	--	--	--
<i>HFRX Equity Hedge Index</i>	-0.2%	0.3%	-2.2%	-3.4%	-2.2%	0.8%	2.4%	1.3%	0.5%	-0.8%
<i>S&P 500</i>	0.1%	4.1%	7.8%	12.6%	6.3%	12.3%	13.9%	14.7%	13.8%	7.5%
K2										
Real Estate Composite	0.0%	1.9%	3.9%	10.7%	12.8%	12.7%	12.7%	12.5%	13.5%	5.4%
<i>Custom Real Estate Benchmark</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	13.5%	5.0%
<i>NFI</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	10.7%	5.0%
American Realty Advisors	0.0%	1.0%	3.4%	9.6%	11.2%	11.3%	11.1%	11.1%	--	--
<i>NFI</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	10.7%	5.0%
Morgan Stanley	0.0%	2.4%	4.3%	11.4%	13.7%	13.6%	13.9%	14.0%	--	--
<i>NFI</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	10.7%	5.0%
UBS	0.0%	1.5%	3.2%	9.6%	10.5%	10.1%	9.7%	--	--	--
<i>NFI</i>	0.0%	0.6%	3.9%	8.4%	11.0%	11.2%	11.3%	11.2%	10.7%	5.0%
Infrastructure Composite	-0.4%	-1.5%	2.5%	4.1%	1.2%	3.4%	4.8%	4.6%	--	--
<i>CPI +4%</i>	0.3%	1.2%	4.4%	5.0%	4.6%	5.0%	5.1%	5.3%	5.6%	5.7%
IFM	-0.9%	-2.1%	3.8%	7.5%	3.6%	3.7%	5.8%	5.4%	--	--
<i>CPI +4%</i>	0.3%	1.2%	4.4%	5.0%	4.6%	5.0%	5.1%	5.3%	5.6%	5.7%
J.P. Morgan Infrastructure	0.0%	-1.0%	1.3%	1.2%	-0.7%	3.4%	4.1%	4.0%	--	--
<i>CPI +4%</i>	0.3%	1.2%	4.4%	5.0%	4.6%	5.0%	5.1%	5.3%	5.6%	5.7%

Total Fund Composite

Fee Schedule

Market Value: \$1,663.9 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee ¹	Industry Average ²
Core Fixed Income	J.P. Morgan	0.20% on the first \$100 million 0.15% on the Balance	0.18% \$310,641	0.24%
Core Fixed Income	Mellon Capital	0.04% on the first \$200 million 0.02% on the Balance	0.04% \$41,538	0.08%
Large-Cap Value	Boston Partners	0.40% on the first \$15 million 0.30% on the next \$25 million 0.20% on the next \$25 million 0.15% on the next \$35 million 0.10% on the Balance	0.20% \$270,863	0.51%
Large-Cap Core	Mellon Capital	0.04% on the first \$200 million 0.02% on the Balance	0.04% \$36,916	0.09%
Mid-Cap Growth	Artisan Partners	0.80% on the first \$50 million 0.60% on the next \$50 million 0.50% on the Balance	0.80% \$350,850	0.78%
Mid-Cap Growth	Geneva Capital	0.55% on the Balance	0.55% \$233,851	0.78%
Small-Cap Value	Silvercrest Asset Management	0.65% on the first \$50 million 0.55% on the Balance	0.64% \$349,877	0.83%
Small-Cap Value	Mesirow	0.70% on the first \$10 million 0.65% on the next \$40 million 0.60% on the next \$25 million 0.50% on the Balance	0.66% \$342,586	0.83%
Non-U.S. All-Cap Core	NTGI ACWI Ex-US	0.08% on the Balance	0.08% \$163,158	0.09%
Non-U.S. Small-Cap Value	GMO Small-Cap	0.75% on the Balance	0.75% \$516,704	1.16%
Emerging Markets	OFI Institutional Asset Management	0.85% on the first \$50 million 0.80% on the next \$50 million 0.70% on the Balance	0.85% \$453,059	0.92%
Hedged Equity Hedge FoF	ABS	0.85% on the Balance *redemptions quarterly with 45 days notice	0.85% \$746,037	1.37%
Long/Short Hedge Fund	Parametric Defensive Equity	0.35% on the Balance	0.35% \$314,173	1.69%
Core Real Estate	American Realty Advisors	0.95% on the Balance	0.95% \$383,252	1.03%

Total Fund Composite

Fee Schedule

Market Value: \$1,663.9 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee ¹	Industry Average ²
Core Real Estate	Morgan Stanley	0.90% on the Balance	0.90% \$791,620	1.03%
Core Real Estate	UBS	0.955% on the first \$10 million 0.825% on the next \$15 million 0.805% on the next \$25 million 0.79% on the next \$50 million 0.67% on the next \$150 million 0.60% on the Balance	0.85% \$342,949	1.03%
Core Infrastructure	IFM	0.97% on the Balance Performance Fee: 20% of return above 8% on a rolling three year basis	0.97% \$713,923	1.80%
Core Infrastructure	J.P. Morgan Infrastructure	1.00% on the Balance Performance Fee: 15% with 7% Hurdle	1.00% \$787,365	1.80%
Private Equity	Adams Street	0.67% on the first \$50 million 0.60% on the Balance 10% carry on secondaries and co-invest (Effective Rate Over 15 Yr Term)	0.66% \$411,419	1.11%
U.S. Private Equity FoF	Siguler Guff II	0.69% on commitment	0.91% \$276,000	1.47%
U.S. Private Equity FoF	Siguler Guff III	0.89% on commitment	2.96% \$355,200	3.70%
U.S. Private Equity FoF	Mesirow VI	0.70% on commitment	2.40% \$210,000	3.81%
Cash Overlay	Northern Trust	0.07% on the first \$100 million 0.06% on the next \$150 million 0.05% on the Balance	0.07% \$17,324	0.20%
Total Investment Management Fees			0.51% \$8,419,306	0.80%
Custodian	BNY Mellon	\$100,000 Annual Fee (approximate)	\$100,000	N/A
Total Fund			0.51% \$8,519,306	

¹ Expense Ratio & Estimated Annual Fee are Based on Market Value at Month End.

² Source: 2010 Marquette Associates Investment Management Fee Study.